



#4



SEQUENCE LISTING

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PÉTERFY, MIKLÓS

<120> A NOVEL GENE ASSOCIATED WITH REGULATION OF ADIPOSITY AND INSULIN RESPONSE

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<140> US 10/028,056

<141> 2001-12-19

<150> US 60/257,772

<151> 2000-12-22

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<170> PatentIn version 3.0

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 Ile Ala Lys Leu Tyr His Lys Val Ser Gln Asn Gly Tyr Lys Phe Leu

705		710		715		720
Tyr Cys Ser Ala Arg	Ala Ile Gly Met	Ala Asp Met Thr Arg	Gly Tyr			
	725	730	735			
Leu His Trp Val Asn	Glu Arg Gly Thr	Val Leu Pro Gln	Gly Pro Leu			
	740	745	750			
Leu Leu Ser Pro Ser	Ser Leu Phe Ser	Ala Leu His Arg	Glu Val Ile			
	755	760	765			
Glu Lys Lys Pro Glu	Lys Phe Lys Val	Gln Cys Leu Thr	Asp Ile Lys			
	770	775	780			
Asn Leu Phe Phe Pro	Asn Thr Glu Pro	Phe Tyr Ala Ala	Phe Gly Asn			
	785	790	795	800		
Arg Pro Ala Asp Val	Tyr Ser Tyr Lys	Gln Val Gly Val	Ser Leu Asn			
	805	810	815			
Arg Ile Phe Thr Val	Asn Pro Lys Gly	Glu Leu Val Gln	Glu His Ala			
	820	825	830			
Lys Thr Asn Ile Ser	Ser Tyr Val Arg	Leu Cys Glu Val	Val Asp His			
	835	840	845			
Val Phe Pro Leu Leu	Lys Arg Ser His	Ser Ser Asp Phe	Pro Cys Ser			
	850	855	860			
Asp Thr Phe Ser Asn	Phe Thr Phe Trp	Arg Glu Pro Leu	Pro Pro Phe			
	865	870	875	880		
Glu Asn Gln Asp Ile	His Ser Ala Ser	Ala				
	885	890				

<210> 4

<211> 891

<212> PRT

<213> Mus musculus

<400> 4

Met Asn Tyr Val Gly	Gln Leu Ala Gly	Gln Val Phe Val	Thr Val Lys
1	5	10	15
Glu Leu Tyr Lys Gly	Leu Asn Pro Ala	Thr Leu Ser Gly	Cys Ile Asp
	20	25	30
Ile Ile Val Ile Arg	Gln Pro Asn Gly	Ser Leu Gln Cys	Ser Pro Phe
	35	40	45

His Val Arg Phe Gly Lys Met Gly Val Leu Arg Ser Arg Glu Lys Val
 50 55 60
 Val Asp Ile Glu Ile Asn Gly Glu Ser Val Asp Leu His Met Lys Leu
 65 70 75 80
 Gly Asp Asn Gly Glu Ala Phe Phe Val Gln Glu Thr Asp Asn Asp Gln
 85 90 95
 Glu Ile Ile Pro Met Tyr Leu Ala Thr Ser Pro Ile Leu Ser Glu Gly
 100 105 110
 Ala Ala Arg Met Glu Ser Gln Leu Lys Arg Asn Ser Val Asp Arg Ile
 115 120 125
 Arg Cys Leu Asp Pro Thr Thr Ala Ala Gln Gly Leu Pro Pro Ser Asp
 130 135 140
 Thr Pro Ser Thr Gly Ser Leu Gly Lys Lys Arg Arg Lys Arg Arg Arg
 145 150 155 160
 Lys Ala Gln Leu Asp Asn Leu Lys Arg Asp Asp Asn Val Asn Ser Ser
 165 170 175
 Glu Asp Glu Asp Met Phe Pro Ile Glu Met Ser Ser Asp Glu Asp Thr
 180 185 190
 Ala Pro Met Asp Gly Ser Arg Thr Leu Pro Asn Asp Val Pro Pro Phe
 195 200 205
 Gln Asp Asp Ile Pro Lys Glu Asn Phe Pro Ser Ile Ser Thr His Pro
 210 215 220
 Gln Ser Ala Ser Tyr Pro Ser Ser Asp Arg Glu Trp Ser Pro Ser Pro
 225 230 235 240
 Ser Pro Ser Gly Ser Arg Pro Ser Thr Pro Lys Ser Asp Ser Glu Leu
 245 250 255
 Val Ser Lys Ser Ala Asp Arg Leu Thr Pro Lys Asn Asn Leu Glu Met
 260 265 270
 Leu Trp Leu Trp Gly Glu Leu Pro Gln Ala Ala Lys Ser Ser Ser Pro
 275 280 285
 His Lys Met Lys Glu Ser Ser Pro Leu Gly Ser Arg Lys Thr Pro Asp
 290 295 300
 Lys Met Asn Phe Gln Ala Ile His Ser Glu Ser Ser Asp Thr Phe Ser
 305 310 315 320
 Asp Gln Ser Pro Thr Met Ala Arg Gly Leu Leu Ile His Gln Ser Lys
 325 330 335
 Ala Gln Thr Glu Met Gln Phe Val Asn Glu Glu Asp Leu Glu Ser Leu
 340 345 350

Gly Ala Ala Ala Pro Pro Ser Pro Val Ala Glu Glu Leu Lys Ala Pro
 355 360 365
 Tyr Pro Asn Thr Ala Gln Ser Ser Ser Lys Thr Asp Ser Pro Ser Arg
 370 375 380
 Lys Lys Asp Lys Arg Ser Arg His Leu Gly Ala Asp Gly Val Tyr Leu
 385 390 395 400
 Asp Asp Leu Thr Asp Met Asp Pro Glu Val Ala Ala Leu Tyr Phe Pro
 405 410 415
 Lys Asn Gly Asp Pro Gly Gly Leu Pro Lys Gln Ala Ser Asp Asn Val
 420 425 430
 Ala Arg Ser Ala Asn Gln Ser Pro Gln Ser Val Gly Gly Ser Gly Ile
 435 440 445
 Asp Ser Gly Val Glu Ser Thr Ser Asp Ser Leu Arg Asp Leu Pro Ser
 450 455 460
 Ile Ala Ile Ser Leu Cys Gly Gly Leu Ser Asp His Arg Glu Ile Thr
 465 470 475 480
 Lys Asp Ala Phe Leu Glu Gln Ala Val Ser Tyr Gln Gln Phe Ala Asp
 485 490 495
 Asn Pro Ala Ile Ile Asp Asp Pro Asn Leu Val Val Lys Val Gly Asn
 500 505 510
 Lys Tyr Tyr Asn Trp Thr Thr Ala Ala Pro Leu Leu Leu Ala Met Gln
 515 520 525
 Ala Phe Gln Lys Pro Leu Pro Lys Ala Thr Val Glu Ser Ile Met Arg
 530 535 540
 Asp Lys Met Pro Lys Lys Gly Gly Arg Trp Trp Phe Ser Trp Arg Gly
 545 550 555 560
 Arg Asn Ala Thr Ile Lys Glu Glu Ser Lys Pro Glu Gln Cys Leu Thr
 565 570 575
 Gly Lys Gly His Asn Thr Gly Glu Gln Pro Ala Gln Leu Gly Leu Ala
 580 585 590
 Thr Arg Ile Lys His Glu Ser Ser Ser Ser Asp Glu Glu His Ala Ala
 595 600 605
 Ala Lys Pro Ser Gly Ser Ser His Leu Ser Leu Leu Ser Asn Val Ser
 610 615 620
 Tyr Lys Lys Thr Leu Arg Leu Thr Ser Glu Gln Leu Lys Ser Leu Lys
 625 630 635 640
 Leu Lys Asn Gly Pro Asn Asp Val Val Phe Ser Val Thr Thr Gln Tyr

645										650										655																			
Gln	Gly	Thr	Cys	Arg	Cys	Glu	Gly	Thr	Ile	Tyr	Leu	Trp	Asn	Trp	Asp																								
660										665										670																			
Asp	Lys	Val	Ile	Ile	Ser	Asp	Ile	Asp	Gly	Thr	Ile	Thr	Arg	Ser	Asp																								
675										680										685																			
Thr	Leu	Gly	His	Ile	Leu	Pro	Thr	Leu	Gly	Lys	Asp	Trp	Thr	His	Gln																								
690										695										700																			
Gly	Ile	Ala	Lys	Leu	Tyr	His	Lys	Val	Ser	Gln	Asn	Gly	Tyr	Lys	Phe																								
705										710										715										720									
Leu	Tyr	Cys	Ser	Ala	Arg	Ala	Ile	Gly	Met	Ala	Asp	Met	Thr	Arg	Gly																								
										725										730										735									
Tyr	Leu	His	Trp	Val	Asn	Glu	Arg	Gly	Thr	Val	Leu	Pro	Gln	Gly	Pro																								
										740										745										750									
Leu	Leu	Leu	Ser	Pro	Ser	Ser	Leu	Phe	Ser	Ala	Leu	His	Arg	Glu	Val																								
755										760										765																			
Ile	Glu	Lys	Lys	Pro	Glu	Lys	Phe	Lys	Val	Gln	Cys	Leu	Thr	Asp	Ile																								
770										775										780																			
Lys	Asn	Leu	Phe	Phe	Pro	Asn	Thr	Glu	Pro	Phe	Tyr	Ala	Ala	Phe	Gly																								
785										790										795										800									
Asn	Arg	Pro	Ala	Asp	Val	Tyr	Ser	Tyr	Lys	Gln	Val	Gly	Val	Ser	Leu																								
										805										810										815									
Asn	Arg	Ile	Phe	Thr	Val	Asn	Pro	Lys	Gly	Glu	Leu	Val	Gln	Glu	His																								
										820										825										830									
Ala	Lys	Thr	Asn	Ile	Ser	Ser	Tyr	Val	Arg	Leu	Cys	Glu	Val	Val	Asp																								
835										840										845																			
His	Val	Phe	Pro	Leu	Leu	Lys	Arg	Ser	His	Ser	Cys	Asp	Phe	Pro	Cys																								
850										855										860																			
Ser	Asp	Thr	Phe	Ser	Asn	Phe	Thr	Phe	Trp	Arg	Glu	Pro	Leu	Pro	Pro																								
865										870										875										880									
Phe	Glu	Asn	Gln	Asp	Met	His	Ser	Ala	Ser	Ala																													
885										890																													

<210> 5

<211> 924

<212> PRT

<213> Mus musculus

<400> 5

Met Asn Tyr Val Gly Gln Leu Ala Gly Gln Val Phe Val Thr Val Lys
1 5 10 15

Glu Leu Tyr Lys Gly Leu Asn Pro Ala Thr Leu Ser Gly Cys Ile Asp
20 25 30

Ile Ile Val Ile Arg Gln Pro Asn Gly Ser Leu Gln Cys Ser Pro Phe
35 40 45

His Val Arg Phe Gly Lys Met Gly Val Leu Arg Ser Arg Glu Lys Val
50 55 60

Val Asp Ile Glu Ile Asn Gly Glu Ser Val Asp Leu His Met Lys Leu
65 70 75 80

Gly Asp Asn Gly Glu Ala Phe Phe Val Gln Glu Thr Asp Asn Asp Gln
85 90 95

Glu Ile Ile Pro Met Tyr Leu Ala Thr Ser Pro Ile Leu Ser Glu Gly
100 105 110

Ala Ala Arg Met Glu Ser Gln Leu Lys Arg Asn Ser Val Asp Arg Ile
115 120 125

Arg Cys Leu Asp Pro Thr Thr Ala Ala Gln Gly Leu Pro Pro Ser Asp
130 135 140

Thr Pro Ser Thr Gly Ser Leu Gly Lys Lys Arg Arg Lys Arg Arg Arg
145 150 155 160

Lys Ala Gln Leu Asp Asn Leu Lys Arg Asp Asp Asn Val Asn Ser Ser
165 170 175

Glu Asp Glu Asp Met Phe Pro Ile Glu Met Ser Ser Asp Glu Asp Thr
180 185 190

Ala Pro Met Asp Gly Ser Arg Thr Leu Pro Asn Asp Val Pro Pro Phe
195 200 205

Gln Asp Asp Ile Pro Lys Glu Asn Phe Pro Ser Ile Ser Thr His Pro
210 215 220

Gln Ser Ala Ser Tyr Pro Ser Ser Asp Arg Glu Trp Ser Pro Ser Pro
225 230 235 240

Ser Ser Leu Val Asp Cys Gln Arg Thr Pro Pro His Leu Ala Glu Gly
245 250 255

Val Leu Ser Ser Ser Cys Pro Leu Gln Ser Cys His Phe His Ala Ser
260 265 270

Glu Ser Pro Ser Gly Ser Arg Pro Ser Thr Pro Lys Ser Asp Ser Glu

275		280		285
Leu Val Ser Lys Ser Ala Asp Arg Leu Thr Pro Lys Asn Asn Leu Glu				
290		295		300
Met Leu Trp Leu Trp Gly Glu Leu Pro Gln Ala Ala Lys Ser Ser Ser				
305		310		315 320
Pro His Lys Met Lys Glu Ser Ser Pro Leu Gly Ser Arg Lys Thr Pro				
	325		330	335
Asp Lys Met Asn Phe Gln Ala Ile His Ser Glu Ser Ser Asp Thr Phe				
	340		345	350
Ser Asp Gln Ser Pro Thr Met Ala Arg Gly Leu Leu Ile His Gln Ser				
	355		360	365
Lys Ala Gln Thr Glu Met Gln Phe Val Asn Glu Glu Asp Leu Glu Ser				
	370		375	380
Leu Gly Ala Ala Ala Pro Pro Ser Pro Val Ala Glu Glu Leu Lys Ala				
385		390		395 400
Pro Tyr Pro Asn Thr Ala Gln Ser Ser Ser Lys Thr Asp Ser Pro Ser				
	405		410	415
Arg Lys Lys Asp Lys Arg Ser Arg His Leu Gly Ala Asp Gly Val Tyr				
	420		425	430
Leu Asp Asp Leu Thr Asp Met Asp Pro Glu Val Ala Ala Leu Tyr Phe				
	435		440	445
Pro Lys Asn Gly Asp Pro Gly Gly Leu Pro Lys Gln Ala Ser Asp Asn				
	450		455	460
Val Ala Arg Ser Ala Asn Gln Ser Pro Gln Ser Val Gly Gly Ser Gly				
465		470		475 480
Ile Asp Ser Gly Val Glu Ser Thr Ser Asp Ser Leu Arg Asp Leu Pro				
	485		490	495
Ser Ile Ala Ile Ser Leu Cys Gly Gly Leu Ser Asp His Arg Glu Ile				
	500		505	510
Thr Lys Asp Ala Phe Leu Glu Gln Ala Val Ser Tyr Gln Gln Phe Ala				
	515		520	525
Asp Asn Pro Ala Ile Ile Asp Asp Pro Asn Leu Val Val Lys Val Gly				
	530		535	540
Asn Lys Tyr Tyr Asn Trp Thr Thr Ala Ala Pro Leu Leu Leu Ala Met				
545		550		555 560
Gln Ala Phe Gln Lys Pro Leu Pro Lys Ala Thr Val Glu Ser Ile Met				
	565		570	575

Arg	Asp	Lys	Met	Pro	Lys	Lys	Gly	Gly	Arg	Trp	Trp	Phe	Ser	Trp	Arg	580	585	590
Gly	Arg	Asn	Ala	Thr	Ile	Lys	Glu	Glu	Ser	Lys	Pro	Glu	Gln	Cys	Leu	595	600	605
Thr	Gly	Lys	Gly	His	Asn	Thr	Gly	Glu	Gln	Pro	Ala	Gln	Leu	Gly	Leu	610	615	620
Ala	Thr	Arg	Ile	Lys	His	Glu	Ser	Ser	Ser	Ser	Asp	Glu	Glu	His	Ala	625	630	635
Ala	Ala	Lys	Pro	Ser	Gly	Ser	Ser	His	Leu	Ser	Leu	Leu	Ser	Asn	Val	645	650	655
Ser	Tyr	Lys	Lys	Thr	Leu	Arg	Leu	Thr	Ser	Glu	Gln	Leu	Lys	Ser	Leu	660	665	670
Lys	Leu	Lys	Asn	Gly	Pro	Asn	Asp	Val	Val	Phe	Ser	Val	Thr	Thr	Gln	675	680	685
Tyr	Gln	Gly	Thr	Cys	Arg	Cys	Glu	Gly	Thr	Ile	Tyr	Leu	Trp	Asn	Trp	690	695	700
Asp	Asp	Lys	Val	Ile	Ile	Ser	Asp	Ile	Asp	Gly	Thr	Ile	Thr	Arg	Ser	705	710	715
Asp	Thr	Leu	Gly	His	Ile	Leu	Pro	Thr	Leu	Gly	Lys	Asp	Trp	Thr	His	725	730	735
Gln	Gly	Ile	Ala	Lys	Leu	Tyr	His	Lys	Val	Ser	Gln	Asn	Gly	Tyr	Lys	740	745	750
Phe	Leu	Tyr	Cys	Ser	Ala	Arg	Ala	Ile	Gly	Met	Ala	Asp	Met	Thr	Arg	755	760	765
Gly	Tyr	Leu	His	Trp	Val	Asn	Glu	Arg	Gly	Thr	Val	Leu	Pro	Gln	Gly	770	775	780
Pro	Leu	Leu	Leu	Ser	Pro	Ser	Ser	Leu	Phe	Ser	Ala	Leu	His	Arg	Glu	785	790	795
Val	Ile	Glu	Lys	Lys	Pro	Glu	Lys	Phe	Lys	Val	Gln	Cys	Leu	Thr	Asp	805	810	815
Ile	Lys	Asn	Leu	Phe	Phe	Pro	Asn	Thr	Glu	Pro	Phe	Tyr	Ala	Ala	Phe	820	825	830
Gly	Asn	Arg	Pro	Ala	Asp	Val	Tyr	Ser	Tyr	Lys	Gln	Val	Gly	Val	Ser	835	840	845
Leu	Asn	Arg	Ile	Phe	Thr	Val	Asn	Pro	Lys	Gly	Glu	Leu	Val	Gln	Glu	850	855	860
His	Ala	Lys	Thr	Asn	Ile	Ser	Ser	Tyr	Val	Arg	Leu	Cys	Glu	Val	Val	865	870	875

Asp His Val Phe Pro Leu Leu Lys Arg Ser His Ser Cys Asp Phe Pro
885 890 895

Cys Ser Asp Thr Phe Ser Asn Phe Thr Phe Trp Arg Glu Pro Leu Pro
900 905 910

Pro Phe Glu Asn Gln Asp Met His Ser Ala Ser Ala
915 920

<210> 6

<211> 26

<212> DNA

<213> Artificial

<220>

<223> PCR primer

<400> 6
cagacaatga attacgtggg gcagct

26

<210> 7

<211> 25

<212> DNA

<213> Artificial

<220>

<223> PCR primer

<400> 7
gctgaggctg aatgcatgtc ctggt

25

<210> 8

<211> 20

<212> DNA

<213> Artificial

<220>

<223> PCR primer

<400> 8
ccatgaatta cgtggggcag

20

<210> 9

<211> 21

<212> DNA

<213> Artificial

<220>

<223> PCR primer

<400> 9
cgctgaggca gaatgaatgt c

21

<210> 10

<211> 86

<212> PRT

<213> Artificial

<220>

<223> Consensus sequence

<220>

<221> misc_feature

<223> Xaa is any amino acid

<400> 10

Asn Xaa Xaa Thr Leu Xaa Gly Xaa Ile Asp Xaa Xaa Val Xaa Xaa Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro Phe His Val Arg Phe Gly Lys
20 25 30

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Lys Xaa Xaa Xaa Xaa Xaa Xaa Asn
 35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Met Lys Leu Xaa Asp Xaa Gly Xaa Ala
 50 55 60

Xaa Phe Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro Xaa
 65 70 75 80

Xaa Leu Xaa Xaa Ser Pro
 85

<210> 11

<211> 159

<212> PRT

<213> Artificial

<220>

<223> Consensus sequence

<220>

<221> misc_feature

<223> Xaa is any amino acid

<400> 11

Tyr Xaa Xaa Xaa Xaa Arg Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Xaa
 1 5 10 15

Leu Xaa Xaa Gly Xaa Asn Xaa Xaa Xaa Phe Xaa Xaa Xaa Xaa Xaa Xaa
 20 25 30

Xaa Gly Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 35 40 45

Xaa Xaa Xaa Xaa Xaa Ser Asp Ile Asp Gly Thr Ile Thr Xaa Ser Asp
 50 55 60

Xaa Leu Gly Xaa Xaa Xaa Xaa Xaa Xaa Gly Xaa Xaa Trp Xaa Xaa Xaa
 65 70 75 80

Gly Xaa Xaa Xaa Leu Xaa Xaa Xaa Xaa Xaa Xaa Asn Gly Tyr Xaa Xaa
 85 90 95

Xaa Tyr Xaa Xaa Xaa Arg Xaa Xaa Gly Xaa Xaa Xaa Xaa Thr Xaa Xaa
 100 105 110

Tyr Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Leu Pro Xaa Gly Pro
115 120 125

Xaa Xaa Leu Xaa Pro Xaa Xaa Xaa Xaa Xaa Ala Xaa Xaa Arg Glu Val
130 135 140

Ile Xaa Xaa Xaa Pro Glu Xaa Phe Lys Xaa Xaa Xaa Leu Xaa Asp
145 150 155

<210> 12

<211> 14

<212> RNA

<213> Artificial

<220>

<223> ribozyme sequence

<220>

<221> misc_feature

<222> (1)..(3)

<223> n is a, c, t, or u

<220>

<221> misc_feature

<222> (9)..(14)

<223> n is a, c, t, or u

<220>

<221> misc_feature

<222> (5)..(5)

<223> n is a, c, t, or u

<220>

<221> misc_feature
<222> (4)..(3)
<223> b is g, c, or u

<400> 12
nnnbngucnn nnnn

14

<210> 13
<211> 20
<212> DNA
<213> Artificial

<220>

<223> PCR primer

<400> 13
tacgcaggga cacatttcca

20

<210> 14
<211> 19
<212> DNA
<213> Artificial

<220>

<223> PCR primer

<400> 14
gagagatgca gctgcgtca

19

<210> 15
<211> 18
<212> DNA
<213> Artificial

<220>

<223> PCR primer

<400> 15
cccttgagca cgttcaca

18

<210> 16

<211> 19

<212> DNA

<213> Artificial

<220>

<223> PCR primer

<400> 16
ctgatcggtg tcagtctct

19

<210> 17

<211> 18

<212> DNA

<213> Artificial

<220>

<223> PCR primer

<400> 17
ggttgtgggg accctgga

18

<210> 18

<211> 18

<212> DNA

<213> Artificial

<220>

<223> PCR primer

<400> 18

gcctgctgca gatgcgtt

18

<210> 19

<211> 35

<212> DNA

<213> Artificial

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<223> PCR primer

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gctcgaattc agacaatgaa ttacgtgggg cagct

35

<210> 20

<211> 37

<212> DNA

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<220>

<223> PCR primer

<400> 20

cgtgcagtcg acgctgaggc tgaatgcatg tcctggt

37

<210> 21

<211> 19

<212> DNA

<213> Artificial

<220>

<223> PCR primer
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ggcgagaccc aatccctga 19

<210> 22
<211> 18
<212> DNA
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<220>
<223> PCR primer
<400> 22
gggtcttcct ctgtaaga 18

<210> 23
<211> 19
<212> DNA
<213> Artificial

<220>
<223> PCR primer
<400> 23
cctggccttga gcttgcctt 19

<210> 24
<211> 19
<212> DNA
<213> Artificial

<220>
<223> PCR primer

<400> 24
cccacggcat gcatcttct

19

<210> 25

<211> 8

<212> PRT

<213> Homo sapiens

<400> 25

Lys Lys Arg Arg Lys Arg Arg Lys
1 5